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REVIEW OF THE LATEST TECHNOLOGY IN CARTOGRAPHIC DATA ACQUISITIONS, MANIPULATION, STORAGE AND PRESENTATION, WITH SPECIAL EMPHASIS ON POTENTIAL APPLICATIONS IN DEVELOPING COUNTRIES: AUTOMATED MAPPING PROJECTS: DEVELOPMENT AND APPLICATION OF DIGITAL CARTOGRAPHIC DATABASES, INCLUDING DIGITAL TERRAIN MODELLING

Access to geographic names data sets on the Internet: developments in the United States since 1994; the GEOnet Names Server

Paper submitted by the United States of America**

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At the seventeenth session of the United Nations Group of Experts on Geographical Names, the Convenor of the Working Group on Toponymic Data Files and Gazetteers observed that "... networks and the information highway (Internet) were rapidly changing the entire process of collection and exchange of [toponymic] information." The validity, indeed prescience, of the Convenor's remark is underscored by steps undertaken by the U.S. Board on Geographic Names (US BGN), the Canadian Permanent Committee on Geographical Names (CPCGN), and other normative bodies in their imaginative and beneficial application of communication tools made possible by the Internet. This report summarizes activity in this area by the Foreign Names Committee of the US BGN.

The foreign geographic names holdings of the US BGN first came on-line on the Internet in October 1994 at a World Wide Web (WWW) site known as the GEOnet Names Server (GNS). The GNS provides a query interface and a tabular display of results similar to the appearance of a page from the well-known series of BGN hard copy gazetteers. Initially, a user required an account and password to gain access to the GNS; this requirement was lifted in May 1996, and users may now access the GNS directly without prior registration with the US BGN. This service is provided to the public without restriction, without cost, and without warranty.

The data base served by the GNS contains records for approximately 3,300,000 geographic features around the world, and 4,700,000 geographic names (figures current as of March 1997). As in the hard copy gazetteers, variant name spellings are cross-referenced to standard names. The currency of the data corresponds to the currency of the associated hard copy BGN gazetteer. Geographic features in the United States and it possessions and Antarctica may be found in the U.S. Geological Survey's Geographic Names Information System (GNIS).

Though the GEOnet Names Server has not been actively publicized, its use in the Internet community has steadily grown in the twenty months since it has been on-line. The peak month to date was February 1997 with over 53,000 data base queries recorded. Use of the Server appears to be evenly split among government (.gov), academic (.edu), and commercial (.com) users. While most queries to the Server originate in the United States, the level of international use is growing.

The principal difficulties associated with the Server are transmission of diacritical marks, and data currency. The Internet currently supports transmission of text data in a variety of text encoding standards. Correct display of the text data depends on matching the text encoding standard employed by the server with the same standard at the client. The client must then employ a soft copy font that displays the encoded text accurately. The GEOnet Names Server at present can supply names data that is compliant with the ISO 8859 Latin 1 standard, which renders text in many Western European languages. At this time, diacritics and special letters not covered by this standard cannot be accurately displayed using data from the GNS. The conversion of our data base to the ISO 10646 standard, and the availability of ISO 10646-compliant fonts, will overcome this problem. This conversion is anticipated over the next two years.

The second problem - data currency - can only be overcome by the availability of authoritative digital names data from national normative bodies. This data is currently in short supply, a problem compounded by the lack of an agreed-upon toponymic data exchange format. Resolution Seventeen of the Fifth United Nations Conference on the Standardization of Geographical Names calls upon the United Nations Group of Experts on Geographical Names (UNGEGN) to "... investigate the possibility of preparing guidelines for direct communication with, and exchange of toponymic information between, various computer systems." The Eighteenth Session of UNGEGN in Geneva, 12-23 August 1996, featured the formation of a special Working Group, consisting of Mr. Roger Marsden of Great Britain, Mr. Peeter Pèll of Estonia, and the author, to investigate and report on a strategy for a workable solution to international digital toponymic data exchange.

The GEOnet Names Server is located at http://www.nima.mil/. Select the "Geospatial Information" option to find the link to the Server. Alternatively, access the Server at http://164.214.2.59/gns/html/index.html. Links from the Server direct the user to other sites of interest to geographic researchers, including the GNIS noted above, and the national data base of Canadian geographic names maintained by CPCGN.

The author welcomes suggestions regarding improvements in GNS service, and is available for more detailed consultation. Report of the United Nations Group of Experts on Geographic Names on the work of its Seventeenth Session, GEGN/17, 2 August 1994, p. 19. Report of the United Nations Group of Experts on Geographical Names on the Work of its Seventeenth Session, GEGN/17, 2 August 1994, p. 19.